



POLTERGEIST II

THE OTHER SIDE

—the Photography

by Ron Magid

In *Poltergeist II: The Other Side*, America's favorite target of psychic activity, the Freeling family, is once again hounded by ghoulies and ghosties and long-legged beasties. Flattening their Cuesta Verde tract home and scaring them all half to death wasn't enough for those vengeful spirits, who have followed the Freelings to a new residence in Arizona, determined to continue the reign of unholy terror they began in 1982 with *Poltergeist*.

The man responsible for capturing the stark terror of the Freeling family on film is veteran cinematographer Andrew Laszlo, ASC, who adamantly maintains that despite its horrific content, *Poltergeist II* is not a horror film. "*Poltergeist II* is a very scary film," he concedes. "It has some very scary elements, but we've tried very deliberately and taken great pains not to have those elements that standard horror films have: the elements that make people jump out of their seats without regard to the film's content, story and continuity. *Poltergeist II* is the story of a family that is haunted through the generations from the grandmother to the mother to the little daughter, and nobody knows why or who by."

Though certain elements of *Poltergeist II* were deliberately designed to meet and satisfy the expectations of the audience whose appetite has been whetted by the first film, the current production has a far less brightly lit quality than *Poltergeist*, since Laszlo and director Brian Gibson opted to go for a more dramatic, more disturbing photographic



Photos by Larry Barbier

tone. "However, a lot of the characteristics of the original film were followed simply because, I suppose, everybody felt it would be a good policy to stay in step with what had been a very successful motion picture," Laszlo says. "The cast is basically the same and we follow the same family through their second ordeal, but that is where the similarities start and end. Brian Gibson obviously wanted to put his mark on the film, and I believe he has accomplished that. The flavor of the film is slightly different from *Poltergeist* because the story is different and because all of us have a different vision, a different imagination and a different method of execution. It is essentially a very scary movie and it uses all the elements available to make a movie scary through photography."

While Laszlo's career in motion pictures is lengthy and his depth of experience unfathomable,

Produced by Michael Grais and Mark Victor

Directed by Brian Gibson

Photographed by Andrew Laszlo

Special Effects by Boss Film

ble, *Poltergeist II* marks director Brian Gibson's second feature. Laszlo found working with Gibson to be a rewarding experience. "Brian has had a very lengthy career in England with documentary films, and commercials," Laszlo explains, "and that was an extremely good background for this film. I think what it really comes down to is talent and the desire to interpret that script and do the film, and Brian had no shortage of that. He is a talented director, and it was, in some ways, very fortunate that his second feature – his first feature in the United States – is really the big picture of the year for one of the biggest studios, MGM. It put tremendous pressure on him, but he has done a good job. The film is, in my opinion, very even, it holds together well, and I don't think the suspense ever lets up. Even when the action is light, the tension is always there."

The Freeling family, children on opposite page and parents pictured here, in various stages of fright and surprise, emotions typical of Poltergeist II.

The family encounters horror in their garage. Arc welders with special rods helped create the sparks.



One of the first indications of that tension in the film occurs at a shopping mall where the Freeling's daughter, Carol Ann, suddenly feels as though she's being followed. "Indeed," Laszlo confirms "there is this man in a strange looking outfit and hat walking through the shopping center, and when the little girl looks back and sees him, she is horrified and she doesn't know why. From then on, the apprehension builds, and we took great pains to find aspects of the shopping mall, located in Encino, California, that were not too bright. The spirit of Kane, played by Julien Beck, comes out of a dark, enclosed corridor where the far end is open and very bright, so he is silhouetted by the bright background and you really cannot read his face until he walks out into the light. Then, of course, he walks through people and people walk through him, and the little girl realizes he's a spirit - he's not alive."

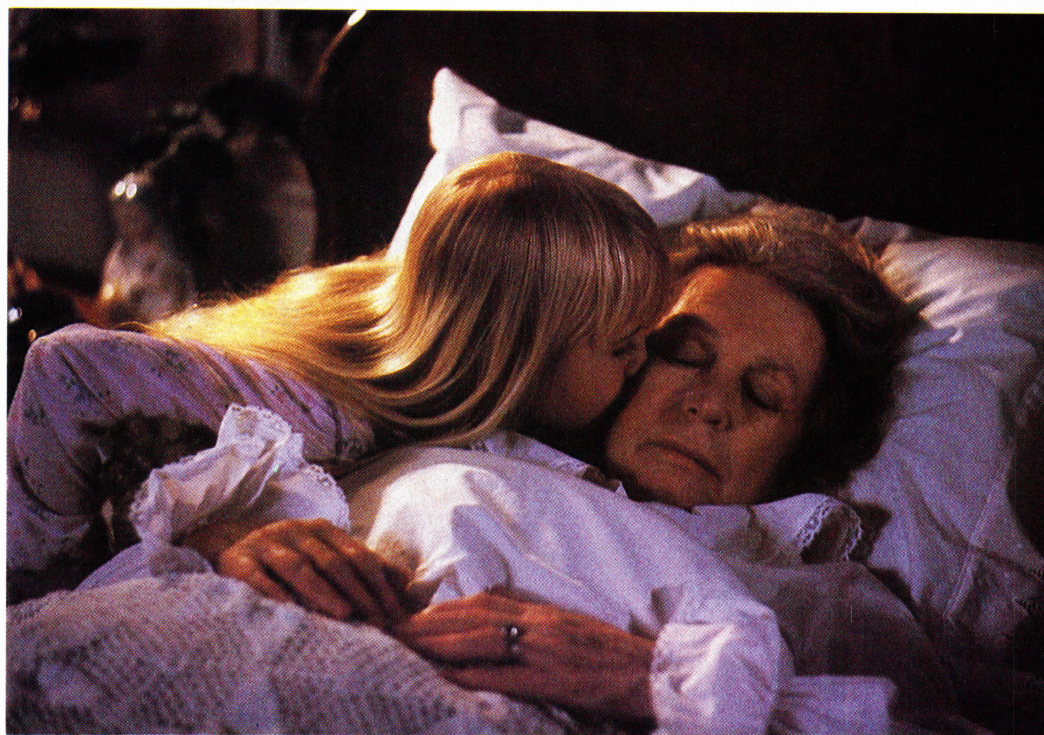
Due to the large number of special visuals required for *Pol-*

tergeist II, there were several weeks of blue screen and other effects photography shot on the stage at Boss Film Corporation by their in-house special effects cinematographer, Bill Neil, who has worked with Richard Edlund for the past six-and-a-half years. "Bill Neil is, in my opinion, one of the outstanding experts in that kind of photography," Laszlo states. "He knows a lot of things I don't know - how the particular photography of a person hanging on a thin wire will be included in a shot while all the other objects, such as equipment in that shot can be eliminated later. I was on that stage with Bill every day, and it was important for me to be there from the very beginning, not just because I wanted to see what he did, but because I wanted to consult with him about what to do in certain instances, knowing what I was going to do with the particular scene for which he was shooting the elements, and, of course, I had to be there to consult with Brian."

Once principal photography began, Laszlo often found his crew working side by side with the Boss crew since any of the shots that were to incorporate matte elements, blue screen elements, or other effects footage had to be photographed in 65mm, as opposed to the 35mm anamorphic format of the rest of the film. This created some difficulties in terms of the lighting, which, for instance, required a much higher T-stop than Laszlo preferred to work with. "There was no difference as far as the style of the lighting was concerned," Laszlo points out, "but there was a significant difference because of the requirements of the 65mm equipment and because of the special effects photography. Special effects photography uses 65mm equipment to begin with because they get a much more detailed and sharp negative, obviously. The negative image is quadrupled from 35mm, so that everything is four times as sharp and four times as well defined. Because of the equipment,

because of the requirement of a great depth of field and the special requirements of that type of photography, I had to be working at a much higher light level than I would normally work at on a dramatic motion picture which requires low key photography for effect. So when they told me they would like to have enough light for a T-4 or 5.6 stop, that was so high above the light level I like to work with, that it almost took some reorientation to do it. You have to know when to say, for an artistic reason, "I really don't want to light this shot for a T-stop of 4 or more, but I know if you shoot it at my light level, stopped down to T-4, we can safely rely on the lab to give us that little push in printing we'll need to get a good, gutsy image on 65mm negatives. Of course these and other limitations complicate one's life. The cinematographer's art, unlike painting or sculpting, is more restricted by the equipment and the techniques and the materials available, and the total of all of these factors comes up as the final image. So along the way, we cinematographers like to eliminate difficulties rather than having to deal with them. Somewhere amongst all the technicalities and mechanics, you have to find that small, or sometimes very large, area we refer to as visual art."

Laszlo did not allow the difficulties of lighting for 65mm interfere with his highly individualistic methods during the making of the film. There are two specific sequences in *Poltergeist II* where Laszlo used unorthodox techniques to produce strikingly eerie lighting effects. One instance occurs at a time when the family makes a desperate bid for freedom, trying to escape from the house using the station wagon in the garage. "When they run into the garage," Laszlo recalls, "the spirits continue to attack and an electrical conduit tears itself loose from the electrical boxes and sockets, and sparks as it swoops around like a snake. At that time, the lighting was accomplished in a



manner I've used successfully before in other pictures. Interestingly, on the largest stage at MGM, with a wealth of electrical and lighting equipment available, we brought in two arc welders and we kept striking steel plates with brute carbon replacing the welding rods so that not only did we see the sparks coming out of the electrical conduit, but we had huge flashes occurring in various spots in the garage.

"Sometimes the actors were silhouetted against a wall that had a huge flash on it, and sometimes they were front lit by a flash that was directly in front of them. We used the arc welder as a supplementary device that would produce not only a shower of sparks, but also a blue flash at those times when we needed it. There are, of course, several conventional ways of creating flashes, but none of them could give me the quality flash that we achieved with those arc welders simply because they were unpredictable. We didn't know how big or small or frequent the flashes were going to be, there was no consistency, so the result was always interesting. There were other sources of light as well. The actual lighting is pro-



Carol Anne and Gramma Jess in scene with special story point. Below: Laszlo and Gibson check setup.

vided by the ceiling lights in the garage. There were two of those, one of which got blown up when the electrical conduit pulled loose."

A sequence depicting Steve and Diane Freeling's descent into an ancient subterranean cave where over 130 years ago, the members of the religious cult led by Kane all perished at the same time, provided Laszlo with yet another opportunity to use his innovative and unusual lighting to great advantage. "The cave was a challenge," Laszlo remembers. "It was very difficult to work on that set. We had to create a horrible feeling, and come up with an interesting image which, technically was very hard to do, because of the way the set was designed and con-



New terrors lurk 'round every corner for the Freelings as the Poltergeist story unfolds and the ghosts return.



structed. The results, in my opinion, are very satisfying. I don't think there's a single picture I've worked on where I haven't suddenly come to a scene and looked through the camera and realized that I've caught one – you know, the big fish had hit the line – and I think that the sequence in the cave might be just that, and I feel that it was the high point, as far as my photography is concerned, of this film. The difficulties involved were that I was working on a set for a cave that was really a cave, with a full ceiling. We saw 360 degrees, so it was very hard to light. We had several shots that were lit by candles, and we had several shots that were lit by Coleman lanterns, a device I used in *First Blood*. Of course, the quality of the light coming out of a Coleman lantern is somewhat different as far as color temperature, as far as direction, as far as intensity, as far as consistency – it's different from one designed for motion picture lighting. It does one very interesting thing, however, the lanterns move with the actors carrying them and when they move, the lit areas and the shadows move, continuously changing the atmosphere. The area where the actors are is lit up as they progress through the set, so you don't see things immediately, you see them as they see them. The actors were carrying the lanterns, and in fact, Craig Nelson who plays Steve, the father, had collaborated with me in that I carefully laid out for him what to do with his lantern at certain times during the particular scene we were photographing. He did such a beautiful job that I offered to help him get a card in the electrician's local! Seriously, I'm very grateful to him. He was not only able to do a great job acting under some very difficult conditions, but he effectively helped me light the scene. It was hard to work in the cave set. Once we got on the set, we were in a stone tunnel with grades and dripping water where cast and crew slipped all over the place. There were some fast camera moves, hand held, Panaglide or dolly shots. We went

Craig Nelson, Oliver Robins, JoBeth Williams and Heather O'Rourke seek the spirits.



through the water and often had to film through tiny little openings in the walls of the set. The difficulty was great, but then again, nearly every film has its difficulties and that's what makes my end of the business so tremendously enjoyable. There never was a standard script that I could pick up and say, 'This shot is a standard #47.' At times, all the preparation that a cinematographer makes – and there are weeks and weeks of it – we get on the set and have to improvise on the spot at the very last second!"

Although Laszlo like to experiment with highly unorthodox lighting techniques, he is a firm believer in motivated light within a given scene, provided he feels that "it serves the script and the moment of the story as best as I think it should be served." In other words, certain scenes require a more stylized lighting treatment in order to come across effectively. One such sequence involved a series of shots of Steve Freeling as he is gradually possessed by the spirit of the great

beast after swallowing a sinister tequila worm. "When Steve first starts out drinking, he is in a very normal lighting situation, sitting in his den in his comfortable leather armchair. As he continues drinking and gets drunker and drunker, he goes up to the landing halfway between the level of the den and the bathroom. He sits down on the landing and drains the bottle to the last drop. The worm goes into his mouth and we can clearly see that he swallows it. By this time, the lighting is becoming much more pronounced, more shadowy, more mysterious, and yet still within the realm of an acceptable situation, but we're beginning to take artistic license. After he swallows the worm, he stands up and his face disappears into the shadow. When he turns to the camera again, within the same shot, the light has totally gone kaplooie! It's just horrible – his face is changing, his eyes are bulging out, the light is coming from below him, and there's nothing but darkness and shadows on his face.

I threw a shadow across his face so only one eye can be seen as he moves in and out of that shadow. The rest of the light falls off as this transformation takes place. As he begins walking up the stairs, his shadow is projected on the wall, and though that's the way it might look, it does have a very ominous feeling. Then he goes into the bathroom, which is perfectly normally lit, but by this time he looks weird and we know something is wrong because his daughter pulls away from him and he chases his wife into the bedroom and attacks her. The bedroom was lit by one practical light on a night table and another in the closet, supplemented by small units. As he attacks his wife, the night table is knocked over and the light falls on the floor and that becomes the major light source so that once again, there are shadows and the scene is back lit or side lit depending on where the camera is. When Steve finally disgorges the worm, we play that action against the light on the floor. The action is horrible, and it's going to scare a lot of people!

Crew prepares high camera angle.



It's something extraordinary. The worm, now a rapidly growing beast, falls on the floor and crawls under the bed. The bed starts shaking and gets turned over. The creature crawls out and now it has a head and little legs and little arms, and the lighting, once again, becomes part of the mood, very sketchy and under lit.

A rather extensive camera move that follows Carol Ann through the various rooms upstairs at night also required a highly stylized lighting approach. "As the shot begins," Laszlo says, "you see the little girl sleeping between her mother and father in

their bedroom. It's what I would call a fairly standard, darkly lit night scene. Then she sits up and quietly gets off the bed and begins walking down the hallway, against a far wall that is lit so she's a silhouette. I took the liberty of lighting up the wall, and if you question it, fine, I'll tell you that it's a night light downstairs. I doubt that anyone will question it. The little girl then goes into her grandmother's room, which, by contrast, is very pretty. Even though she's just died in there, it's lit up in a higher key than the rest of the house. Why? Because it felt

right for the scene and that's the way we did it. That's what the mood of that particular shot called for. She kisses the dead grandmother, comes out of that room and goes into her own room, which is lit very low key, yet we can see everything because of little areas of light here and there. What lights it – who knows? Then she gets into bed, picks up the toy telephone on the floor and talks to her dead grandmother, and that's the end of the scene. Even though I strongly believe in motivated light, in the case I just described, the idea was that the room was in total darkness, but if I put it into total darkness, you won't see what's happening. Not only that, but I think that as cinematographers, we have a wonderful opportunity to create feelings or to take an artistic license and create an illusion of darkness so that, yes, you'll agree that this little girl walked into a dark room without any lights on and yet you could see everything."

Because of his penchant for doing the unexpected when it comes to lighting and camera techniques, Laszlo prefers to work with crew people who have worked with him before and who understand his more unorthodox methods. For *Poltergeist II*, Laszlo was pleased to be able to bring on Dick Meinardus as his first assistant, Larry Hezzelwood as his second assistant, Don Nygren as his gaffer, Len Lookabaugh as his key grip, and Bob Marta as his operating cameraman – most of them have worked with Laszlo before and he regards them as "family." He explains: "Most of the people on my crew have worked with me on a number of pictures, and it's a wonderful feeling to know that you don't have to give detailed instructions about what is involved with every shot. It's a wonderful feeling to know that you have the friendship, loyalty, expertise and support of these people." △

Ron Magid writes for various film magazines and is a regular contributor to American Cinematographer.



It's a Jungle out there...

Once upon a time, lighting was easy. In the days of black and white all you needed to worry about was whether you had enough light to shoot. Even in the early days of color, the lighting was either incandescent or daylight, and Kelvin was easily controlled with a few amber or blue gels.

Then suddenly, a whole new generation of efficient new lights appeared. Every location had its own brand of lighting monsters. From energy-efficient fluorescent lights in office buildings, to various breeds of discharge lamps lighting streets and shopping malls. They created a new set of problems for the cinematographer and gaffer.

Just measuring Kelvin is no longer enough. Now you need a little more information to handle the Mired Shift from amber to blue and the Color Compensation to adjust the green. That's why Rosco has published a new "Lighting In The Jungle" Handbook, chock-full of useful data and the Rosco "Jungle Book" swatchbook for location lighting. Both are yours free for the asking. Be sure they're handy before your next encounter with the lighting monsters.

ROSCO

36 Bush Avenue, Port Chester, New York 10573—(914) 937-1300 Telex: 131472
1135 North Highland Avenue, Hollywood, California 90038 (213) 462-2233
1271 Denison Street #66, Markham, Ontario, Canada L3R4B5 (416) 475-1400
Also in London, Madrid and Tokyo.



Photos by Virgil Mirano

POLTERGEIST II

THE OTHER SIDE

—the Special Effects

by Ron Magid

Boss Film's lengthy involvement with the *Poltergeist II* project began with a meeting over lunch between Richard Edlund and Mark Victor and Michael Grais, writers of the original "Poltergeist." Victor and Grais, realizing they had written a script that was more ambitious than MGM was willing to pay for, welcomed Boss's contributions in terms of cost-saving measures and alternate effects suggestions. "I brought John Bruno in as our effects art director," Edlund recalls, "and he began storyboarding the show in conjunction with discussions we had with all the

various people at Boss and the producers. In this way, we introduced some ideas, changed certain ideas, decided to do some things and not to do others, and we ended up with a very complete set of storyboards for the entire effects sequences and some of the live action that surrounded them."

Because the politics involved in bringing *Poltergeist II* to the screen were highly complex, change and flux became the norm as directors would come on the project, make suggestions, and then leave. After two months, the

man who did direct the film, Brian Gibson, was hired, and there were more changes, although it didn't end there, as Edlund explains: "When Brian Gibson came on, we went through and re-storyboarded everything, and even though many things wound up the way we pictured them originally, there were a number of changes. We spent almost five months storyboarding the picture, and it was very difficult to get Gibson to settle on an idea, and there were constant changes he would make all the way along."

Though constant changes tend to de-stabilize any production, especially a special effects film, the main crisis that Edlund and his Boss Film team faced was the onus of topping their work for *Poltergeist*, spectacular visuals they had created for the most successful ghost story ever filmed. "We're following a hard act," Edlund admits, "because all of us really put our hearts into *Poltergeist*, which was one of the funniest movies I've done. We had to discover what ghosts actually looked like and what people's subconscious minds would accept in terms of the spectral images of the first picture. That was the challenge of "Poltergeist," because we had a situation where the effects were taking place in what I call an anthropological time capsule: 1982 and the American Dream was the state of the family, with Steve Freeling being a successful real estate salesman living in a wonderful house with all the latest stuff and a nice new station wagon. The difficulty in doing a picture like this, as opposed to *Star Wars* and *Raiders Of The Lost Ark*, is that we're dealing with a realistic surrounding, everybody's living room. Therefore, the effects had to not only be peerless, they had to really work in the scenes and look as though they weren't glued on or phony. With *Poltergeist II*, we're dealing with an audience that is already honed out to a pretty fine edge of expectation, and therefore, the material we came up with for the picture had to be at least as good as those of the first film."

While storyboards continued to be drawn and effects developed, locked down, and tested, the miniature department at Boss Film, headed by Mark Stetson and Leslie Ecker, began the construction of a fairly large tabletop model of the Freeling home and its surrounding environs, including the homes of four neighbors and a mountain range in the background. It took a team of approximately seven modelmakers nearly seven weeks to complete it, but when they were finished, the miniature was, in many ways, an im-

provement over the full-sized house set MGM had built in Altadena, California. "The actual location house was supposed to double for Arizona," says Stetson, "but we thought the area didn't really look a whole lot like Phoenix, so we made some changes in the vegetation to try to bring that across. Part of the purpose of building the miniature was to allow for wider shots than could be practically lit on the location site for a night shoot, so what we got was something that could be shot five lots wide, instead of about one lot wide, which is the widest they ever got at the location."

"We also pushed the surrounding houses out a little wider from the featured house," Ecker adds, "so it would look a little more isolated. We reproduced every stick of furniture and hanging plant in exact detail on the hero house, and the lawn was made from a kind of fake fur sprayed green. The hedges and trees were very impressionistic because we were shooting at night, and the ivy was made using sisal covered with little oatmeal leaves painted green."

In addition to utilizing miniature landscapes, the effects for *Poltergeist II* run the state-of-the-art gamut, including cloud tank effects, animation, puppetry, matte paintings, and mechanically articulated creatures. Significantly, almost none of these effects were achieved singly by any one department. Even the "simplest effect," such as rain falling from a cloud at night, was enhanced through touches added by other divisions at Boss. The shot in question is one of the most elegant effects in the film, involving a massive storm that gathers above the Freeling home only and torrents of rain that drench the Freeling lot but leaves those of their neighbors bone dry. The sequence, which takes place in the heavens over the Freeling house, was designed to show how rain begins, and has a perturbing mystical quality about it. The initial effect was created by Garry Waller, special projects supervisor, utilizing a large water

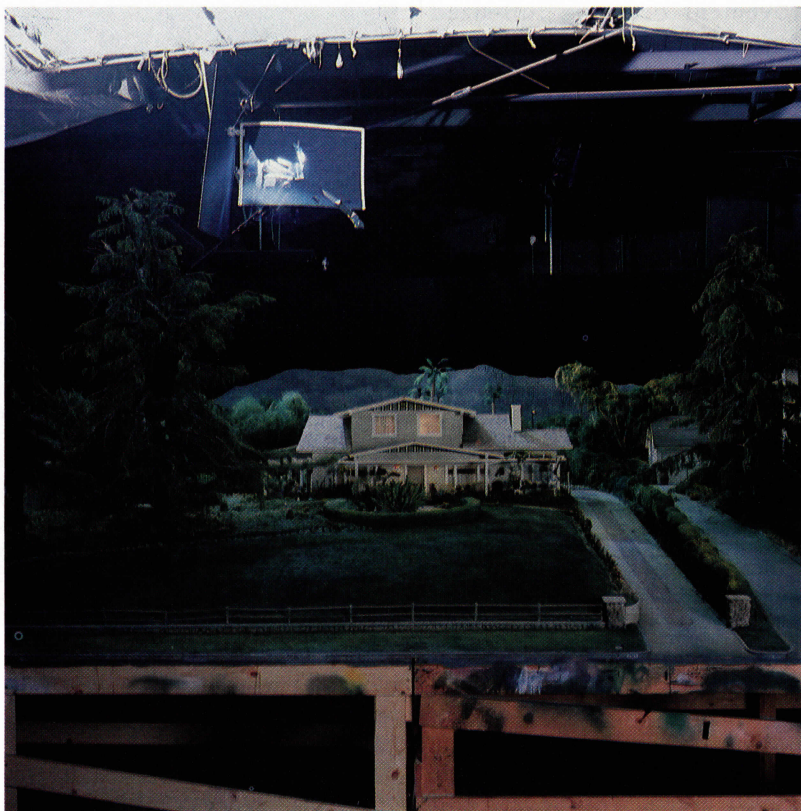


tank into which various dyes can be placed to simulate a variety of natural and unnatural phenomena. "That was one of the first shots we got to do," Waller explains. "John Schreiber and I made the cloud by injecting paint into the water, and as the dye expanded, we had flashes in the water that were timed to simulate lightning. We actually developed a technique to get glass beads into the tank to simulate raindrops without rippling the water, which creates dark shadows on the clouds and ruins the illusion. Then we crosslit the beads so that one side of them had a kick, and they were bladed off so that they weren't so bright as they came out of the cloud."

Though the effect was technically fine as it was, it was decided to have Mark Vargo, Boss's optical effects supervisor, add some further refinement to the shot by superimposing stock rain footage. "The shot as it was didn't have the depth and dimension to suggest a rather large downpour coming at the camera," Vargo says. "The cloud had been shot with a wide angle lens to give it scale, but it didn't have the impact that the director wanted for the length of time it was going to play on the screen. We decided to break it up into three stages of development. At the beginning, once

Opposite page: Animated ectoplasm in Indian lodge as Nelson and Sampson look on. This composite is courtesy of Boss Film. Above: The haunted Freeling home at night.

Freeling home in miniature with manufactured cloud shadow.



the glass beads had started to fall, we faded in actual rain at the horizon. Then we next dissolved rain onto the midpoint of the cloud, so that it started to fall higher and appeared to be getting closer to the screen. At that point in the dissolve, we threw the farthest element of the rain out of focus, so the rain appears more tangible, as if it is moving closer. Then we dissolved one more time so that the rain was full frame, as if it were on the camera, and during the course of the final dissolve, we added diffusion to the cloud to create the look that rain will give a subject that's behind it." It may seem like a lot of work to recreate a simple act of nature, but, Edlund insists, "We always try to add little subtle extras to our shots to make them look convincing and natural, and it's the optical department through which all these bits are passed."

Another difficult optical effect was required to convince the audience that a shopper in a mall had passed through the seemingly solid body of the ghostly nineteenth century cult leader, Kane,

played by the late Julien Beck. "That was one of the trickiest traveling mattes in the show," Vargo admits. "Kane was shot against blue screen, and intense efforts to maintain scale and lighting were worked out by visual effects director of photography Bill Neil to get them balanced properly. The transition of the person in front of and then behind Kane was created by way of rotomattes, and efforts were made to insure that they looked unlike typical hard-edged mattes. We were really happy with that shot, because until that person passes through him, you thought Kane was actually there, when in fact, he was matted in. We used a double trick there: Kane was matted in and the extra who passes through him was rotoscoped."

Certainly the goal of any visual effect is to fool an audience into accepting a trick shot as the real thing, yet nowhere is this more difficult to achieve than in the case of full frame matte paintings, where the live action element, if any, is very small. Four full frame mattes were painted by

artists Michelle Moen and Matthew Yuricich, working under matte department supervisor Neil Krepela. Two of these paintings featured different angles on the "power spot," a tall, spindly rock formation rising up through the center of a vast canyon. It is here that the Indian shaman, Taylor, played by Will Sampson, conjures his benign magic from out of a fire built at the peak of the strange rock formation, and it was necessary that he be seen from a god's eye view at an impossible height directly above the "power spot," as well as from another angle looking across the canyon. "The scene was set at night," Krepela observes, "and whenever you do landscapes at night, it becomes difficult because references are not easily obtainable, and usually the references you do find were shot during the day and printed down. Everybody's got their own opinion of what a night shot should look like, so Matthew Yuricich had quite a time getting it all to work. The mattes were composited using rear projection onto the appropriate cut-out areas of the paintings, and photographed using "Comp-sy," (a robotic matte camera.) Yuricich also put little subtle moves on everything, which really helped out and were almost essential since most of them were full matte paintings." Edlund concurs with Krepela noting that "the essence of a great matte shot is to have some sort of life in the shot, because otherwise, it looks just like a dead painting." For another shot in the same sequence atop the "power spot," Garry Waller utilized a technique of pulling silk through a cloud tank in order to create amorphous specters that would emerge from the fire and magically wrap themselves around Taylor's body. "I drove everyone crazy with the silk effects," Waller concedes, "because I knew the animation department had a big burden with the ectoplasm job, and I thought that with silk, we could simulate some animation effects, which eventually worked out really well. When we see Taylor on top of that rock in long shot, the

THE PRIMITIVE CREATURE

P 9

The creature as conjured up by Giger and, below, the creature itself.



ghosts look more like smoke coming out of the fire. They're very ethereal, and have a real loose form. They were marionettes strung out in the tank and then pulled in reverse very slowly and overcranked a little bit. Then the optical department added a little bit of moiré to give it a twinkle and to take the edge off it. We used a lot of silk, actually, for a later part in that sequence where the smoke comes out of the fire and wraps around Taylor in a tighter shot. That was pretty interesting because we were running to get it shot and done so we could prove that it worked, so we shot it going around itself instead of wrapping around a black pylon, which would have given it the effect of going behind something. Since we didn't do that, Annick Therrien and the animation department did some really intricate rotoscoping tricks, and Chris Regan developed a soft and hard matting optical technique to make it look like the specters went be-

hind Taylor and in front of him at the same time."

To describe the motion of the silk in the tank, Edlund uses the metaphor of a Chinese calligrapher who uses a large brush to create an action character poem in one sweeping, graceful movement: "It's a kind of calligraphy that is in the movement and the energy he puts into his body as he does that..." Here Edlund painted a great swirl in the air, his entire body working with the motion of his arm. "That is what gives the real dynamics to the piece." In order for the dynamic action to create a convincing visual effect, however, it must be coupled to a sophisticated scientific method, Edlund explains. "For the sequence involving Will Sampson, in order to make it look like the specters were swirling around him, the distance away, the optical effect of the water in the tank in terms of how it modifies the focal length of the lens, all of these factors come into play. If we don't have it just right,



then it doesn't work and it looks wrong. If you have all these things under control, if you have your physics and your mathematics right, then the art you do within that framework is going to really work."

A completely different type of spectral imagery was needed for an eerily beautiful scene in which some 40 spirits materialize on the Freeling's front lawn at night, amidst a swirling ground fog. In order to achieve the appearance of vaguely defined, shimmering ghosts, actors clad in the cliché bedsheet attire of silent movie spooks were photographed



**Creative consultant
Cornelius deFries at
work on the *Great
Beast*.**

as they were reflected in a mylar mirror, which was brushed from behind, causing the image to distort and refract even more. The “ghosts” were shot by Matt Beck in groups of one to four actors, and the separate images were given to Neil Krepela to composite on the Compsy camera, which can be positioned anywhere along a track in relation to a rear projection screen opposite the camera. “The ghosts were shot with a 35mm camera with a cheap lens that gave it a distinct look,” Krepela notes wryly. “We had then to blow the 35mm material up to 65mm and then combine all of the separate pieces of film into one. The original shots of the ghosts were primarily full frame portraits, but some of the specters had to appear fairly tiny in the frame so they would seem further away. They all had to be placed in the proper position and correct size in the frame, because they had to work in perspective as they rose up on the front lawn of the house. Before I re-photographed the ghosts on the Compsy camera, I got a color print of the house onto which I projected a photo of a drawing by John Bruno that

showed the ghosts’ size and position in the frame. Then I assembled a roll of the ghost footage we were going to use in the order I wanted to shoot them, and I projected them onto the rear screen as I moved the Compsy along the track until the projection size of each ghost matched its scale in the drawing. By pushing one button, the computer remembered all of the positions and returned to them when I went to shoot the ghosts. I would move the camera, shoot that section, and backwind the film. When I was through, instead of having to composite 40 pieces of film in optical, Mark Vargo had four. Garry Waller then shot little glows that were added on top of the ghosts.” Mark Vargo calls the shot “an excellent example of making something out of nothing, because there’s no live action whatsoever in that shot.”

Creating illusions from nothingness is precisely what John Bruno, who served as visual effects art director, was faced with as he worked with the animators in designing the scenes involving ectoplasm that emerges from a toy telephone and fills a room. “Instead of doing it the way we did it in the first movie, which was basi-

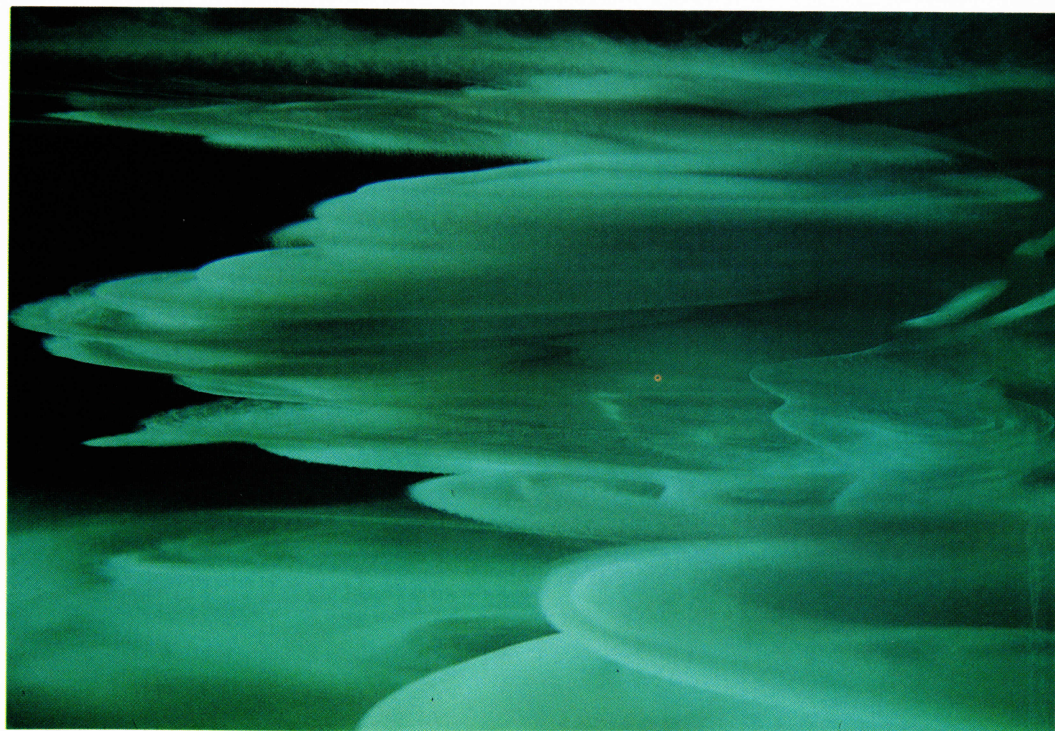
cally one level of animation moving from right to left,” Bruno observes, “we wanted the ectoplasm to move in and out. I divided the animation into multiple layers so that, by using Mark Vargo’s expertise in optical work, instead of superimposing the ectoplasm onto the film, we matted it in layers. It was done exactly the way we did it in *Poltergeist*, except for the optical technique and the fact that it works dimensionally in the scene.”

The addition of the noted Swiss surrealist painter, H.R. Giger, to the preproduction design team was both an exciting and terrifying prospect to the Boss Film team. Giger, who received an Academy Award for his brilliantly bizarre designs in *Alien*, was hired to create the look for the various stages of the great beast, a hellish apparition with which Steve Freeling must ultimately do battle in the astral dimension. “Somewhere during the time we were re-boarding things for Brian Gibson, we heard the H.R. Giger was engaged for certain creative contributions toward the design of the monsters,” Edlund recalls. “Then we met with Giger, who flew over from Switzerland, and we talked to him about the faculties that the creatures should have. Giger worked primarily in Switzerland. I talked to him on the phone a couple of times, we had a couple of meetings over at MGM, and he sent his designs over from Europe. Since he is a fine art painter, we had to take those designs and “kinetify” them. Though we had come to an agreement that he was supplying conceptual material, it’s difficult for any fine artist to put his work in somebody else’s hands to execute. We had reached a certain point in our sculpting when we heard that Giger was on his way over, and that put me in a rather trepidatious frame of mind because I’d heard some stories about his work on *Alien* and how there’d been some trouble between him and Ridley Scott. I was a little worried about the situation because we didn’t have time to go back and rework things if he said,

"Well, that's not my idea." When he did show up, he was very happy with what we had done, in fact, he was elated, so all that trepidation went to naught and we just went ahead full bore!"

Steve Johnson, Boss's creature design supervisor, was the man responsible for the final interpretation of Giger's designs, and he oversaw the sculpting, molding and articulation of the various stages of the great beast. Since he is a big fan of Giger's, Johnson was excited by the opportunity to work with one of his favorite artists, though he admits that when Giger arrived from Switzerland, "everyone was terrified." Part of Johnson's concern was based on the fact that in translating Giger's two dimensional designs to three dimensions, he had wanted to avoid the *Alien* look as much as possible. "We did a lot of research into fetal photography," Johnson says, "because what we were trying for, and what we achieved, was Giger's exterior look with different colors and a translucent quality. When the stuff is backlit, you can see veins, and we used warm tones, which I think added quite a bit, rather than the cold blues and grays of Giger's work. When Giger arrived at the shop, he was thrilled with our work and gave us the ultimate compliment when he said that he could tell right off the bat that we knew what we were doing, and he wasn't worried in the least bit that his stuff would come across. Even though he could see that in some ways, we were changing his designs, he felt we were improving them. Giger's work is really hard to get across because his paintings are so rough and intense, you have to sculpt it rough in three dimensions, which is something that doesn't come easily to an effects artist trained for film, where you're used to doing stuff that's photo-realistic. Giger's art doesn't work that way, and it was tough for me at first, so I sculpted a lot of stuff that was really quick and rough trying to recreate that look."

The evolution of the great beast promises to be one of



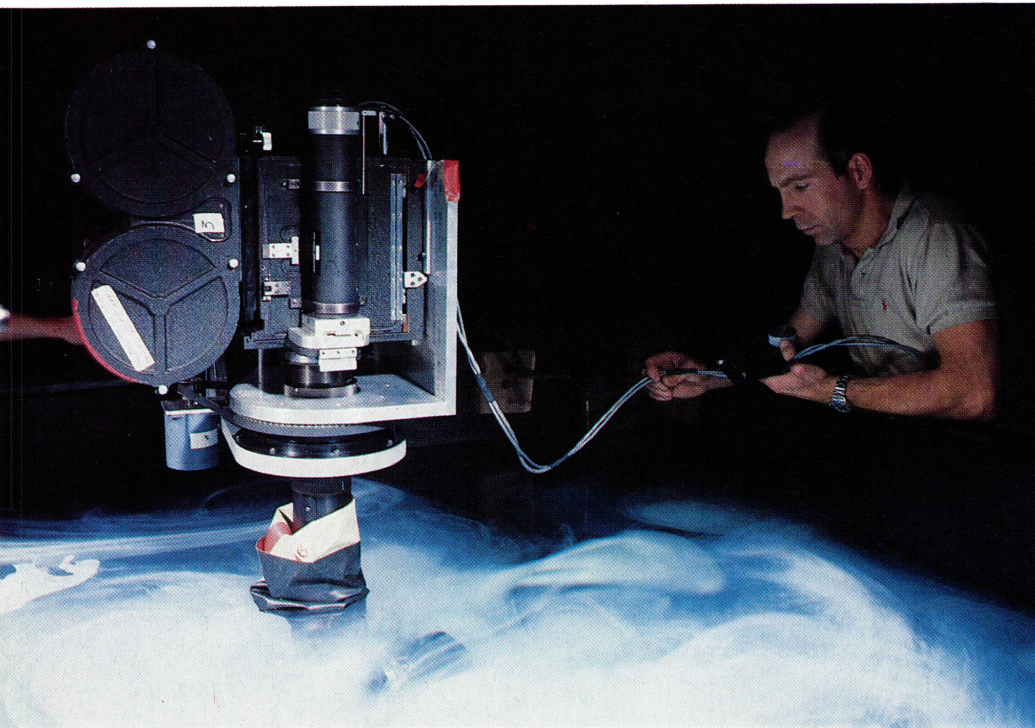
the most startling and bizarre transformations ever recorded on film. The beast originates as a small but malevolent worm floating in a bottle of tequila which Steve Freeling drinks one night as he attempts to escape from the tension of living in a haunted house. Within moments after having swallowed the worm, it begins to expand inside Steve's body and he falls to the floor, retching. "The creature is actually regurgitated by Steve," Edlund explains, "and it quickly develops from a flopping embryo to a huge multi-headed beast with gigantic arms and claws that does battle with Steve in the hallway and later, in the astral dimension."

The creation of the great beast through every stage of its transformation pushed the science of articulated rubber pieces to new heights, as Johnson and his crew combined traditional prosthetics, pneumatically controlled appendages, a half-scale rod puppet, and other state-of-the-art techniques to produce an awe inspiring cumulative effect. For the first stage of the transformation involving the disgorging of the worm, an inflatable balloon



The astral dimension. Below: John Schreiber, right, and Waller in front of cloud tank.

rubber worm was devised that appeared to grow as it was expelled. "We attached the balloon rubber worm to a dental plate in the actor's mouth so that when we inflated it, it wouldn't go down his throat," Johnson explains. "The inflatable worm was covered with a placenta-like substance on the outside, and we filled it with water so it had a weight to it. As it became fuller, it began forcing its way out of Steve's throat and not only extended, but grew in cir-



Pete Romano with submerged snorkel lens effects a motion control shot for the *Astral Dimension*.

cumference. Next, we switched the inflatable worm with one that grew to about three feet and fell out of Steve's mouth, and then we made another one that was worked by a drill motor underneath the stage floor so it could scurry across the floor under the bed. We then see it underneath the bed from the opposite side as it turns into the transformation baby, which is backlit and appears somewhat translucent."

For the next stage of the transformation, it was decided to build a very special, highly complex man-in-a-suit monster to be worn by Noble Craig, a paraplegic who had lost both legs and an arm in the Vietnam war. Despite this handicap, Craig has incredible fortitude and was able to move very acrobatically, which allowed Johnson and his crew the freedom to design a wildly bizarre costume, complete with air bladders inside the ribs making it appear to breathe. "We made a self-contained prosthetic for this weird kind of arm," Johnson adds, "which we applied where Noble didn't have an arm. We attached little flippers to his elbow so that when he moved his arm, it would

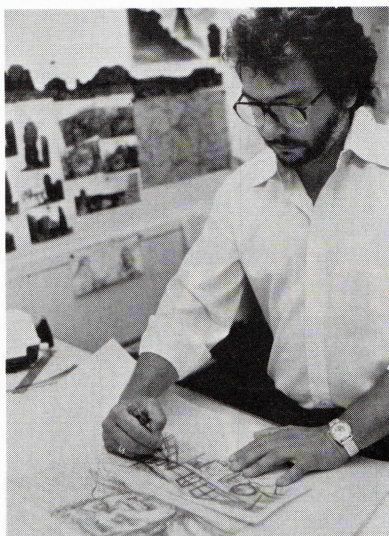
activate the claws at the end of the suit's arm. We made a mechanical head for the close-up of his face working, which the director wanted to closely resemble Kane."

Next, Steve is attacked by the great beast's full sized hydraulic-powered arms, which bursts into the bedroom from out in the hall and slams him up against the ceiling. After he recovers from the attack, Steve ventures out into the hallway, where he sees the great beast for the first time. "We made a half-scale rod puppet, which was one of the most difficult things in the film, because it had to be really versatile and it had to be an actor," Johnson continues. "It had to do so many things, and it had a myriad of attachments. We used wires, rods, and a lot of appendages that were cable-activated, such as the hands and arms. It also had twelve intestine-like tentacles that sprouted from its head, and the body itself is like a weird scorpion tail that constantly twists and undulates. It's covered with a kind of placenta also, and it's made up of probably sixty tortured faces all blended together."

A number of additional effects were added after a rough

cut of the film was assembled and MGM executives decided it needed a few more shocks. One of the more unusual of these was a transformation of little Carol Ann Freeling into a decomposing cadaver, a sequence designed by Steve Johnson and Screaming Mad George with the collaboration of Bill Neil. "The decomposing head of Carol Ann is really neat," Johnson comments. "It's a full sized motion control figure, which is something that I've been wanting to try since *Ghostbusters*. I wanted to marry the state-of-the-art transformation to the old time optical dissolve technique to bring it full circle. Basically, all it is is a mechanical figure that's programmed with a certain set of moves by Bill. Once it's set, you just push a button and it'll go through its entire move at exactly the same rate of speed and with the same movement each time. The thing was programmed to tilt its head, open its mouth, and open its eyes, and we just put a different skin on it each time we wanted it to change. We ended up doing four stages and we're possibly going to add a fifth, which is almost a fully skeletal head with no flesh on it at all. This technique gives us the leeway of having each figure composed identically, with the camera angle locked off through the whole move, and then we can take that footage and decide exactly where the right place to dissolve would be. Because it's such a quick shot, there will always be an overlapping image, so it'll be real smooth." Edlund elaborates: "Chris Regan then put an optical zoom on all the 65mm blue screen elements so that the whole shot has a built-in visual dynamic, made possible by our new ZAP (zoom aerial-image printer)." Besides shooting the Carol Ann decomposition, Bill Neil shot the miniature house sequences, the scenes involving the great beast rod puppet, and dozens of blue screen process shots that were incorporated into the film's most difficult effect, the journey to the "other side:" the astral dimension. "Since the final scenes were all effects that took

John Bruno, art director.



place in the astral plane," Neil recalls, "we had an agreement with the producers that we would shoot that material first, so we could have the longest lead time to work on it. We shot all of the blue screen astral sequence with the actors two weeks before principal photography began. Then, after the production was over, as they were cutting the film together, they decided they wanted to add some material, so we had a second blue screen shoot after photography ended. Finally, there was yet a third blue screen shoot scheduled with the actors." Edlund adds: "The post production scheduling had to be extended so we could 'fix' the end of the movie."

"Since the film is called *Poltergeist II: The Other Side*," Edlund says, "we had to bring the audience into the environment of the astral plane, and, as it turned out, keep them in there for quite a while. I fought against making that sequence very long from the beginning of the picture, since my feeling is that when you subject an audience to something that you want to have a dynamic effect on them, you don't want to keep them in that situation for very long because then their senses get dulled to it. The worst example of staying in a situation like that for too long is in *Tron*, where the audience is supposed to find something of interest in a basically barren geometric environment."

"It was our job to figure out how the astral dimension could be brought to the screen, knowing the time and technical limitations of pulling that off," says Vargo, optical effects supervisor. "We could have done it with light or the absence of light, or with matte paintings, but we ended up using various interesting levels of cloud tank elements choreographed so that the dimension and scale of the family could be appropriately shown in an infinite void. The environment was not close and claustrophobic, but vast and everlasting. Some of the shots have as many as twenty elements, while others have just two. It spans the color range from dark blue and steely Giger-like grays to what we thought of as 'heavenlight': golden, white and pure. It was a very complicated sequence to pull off elegantly because we were dealing with such an intangible subjective realm."

Garry Waller, John Schreiber and Pete Romano began experimenting with a number of different cloud tank environments. In order to give more depth to the astral plane, it was decided to actually submerge the lens on a 65mm camera and fly it through the tank. "The astral dimension," Edlund explains, "was done using a very complex setup in the cloud tank with a 65mm camera mounted aboard an x-y-z motion control rig with a 40-inch deep snorkel that came down into the water. We had to build an underwater snorkel with a wide-angle bubble on it. Though we used this for a couple of shots in "2010," we perfected it further and we were able to get a very wide angle lens into the snorkel, and we were able to fly it around, move up and down, roll and pan the camera within the seven foot square tank. We used a lens with a 28mm focal length, which is extremely wide for the 65mm format. The astral dimension is not a psychedelic situation, it's relatively monochromatic in the bluish area, but there are subtle colors, and some interesting mauve tones in there. Garry Waller had a system of layering the

tank with saltwater and fresh water to begin with, and then he would inject dye and pigment into the various layers to create a sort of three dimensional painting. Once the dye and pigment were in, Garry would wait until they settled out and got to a point where there was a certain amount of movement in them, and then the camera would roll a pre-programmed shot through the layers, and then Garry would empty the tank and go through the whole business again."

Because of the length of the astral dimension sequence, Edlund's crew not only had the burden of devising a constantly changing environment that would continuously excite an audience, they had to make each shot in the sequence flawless. "Since every shot had to be perfect," Edlund says, "matte lines and all of the traditional basic problems had to be virtually non-existent. Also, the family always had to have a consistent eyeline, because if you don't do that, the convergence of the eyes can be very subtle, and the audience will see them looking beyond the object they're supposed to be looking at. Everything had to be carefully handled – the balance, the diffusion and the treatment of aerial perspective – since it's a cloudlike, unearthly, and dimensional situation. There's probably fifty shots in the astral plane, where initially we had planned about fourteen. There's a lot of serendipity involved in this kind of situation, and we shot quite a bit of footage. Since the basic environment had lights and atmospheric effects built in, you have to make sure that when the lens is pointing toward the light, it's being shielded by material in the foreground so you don't get a flared image. We also added a number of sub-elements – wisps and plasmatic forms and shapes that would come whipping through the shots – so there's a relatively unpredictable and organic background and therefore, it remains always interesting." △

Supernatural Noises for *Poltergeist*

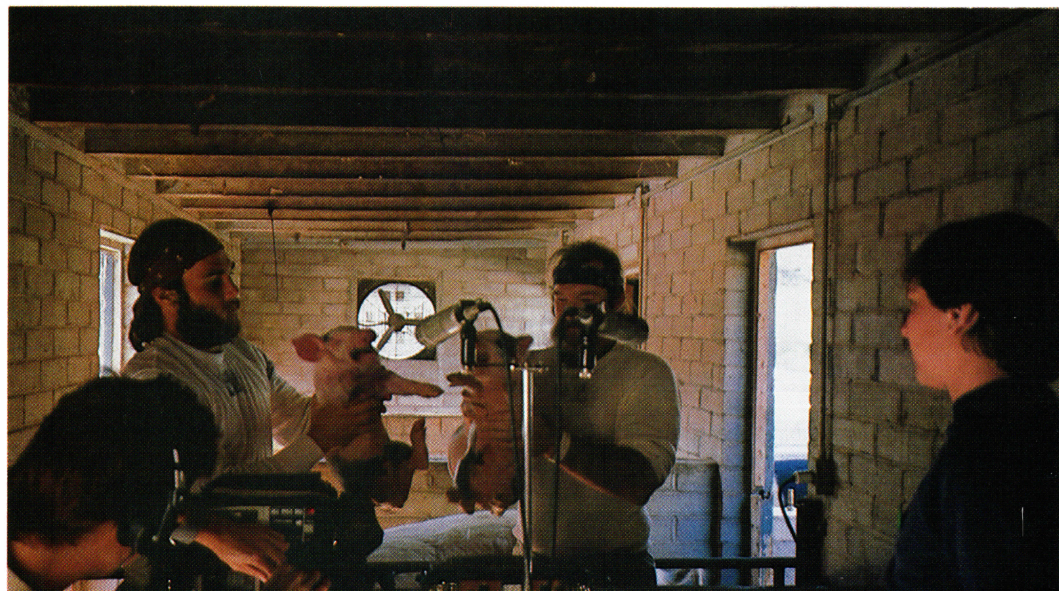
by Frank Serafine

Director Brian Gibson had definite ideas on creating the sounds for *Poltergeist II*. They had to be sounds that had never been heard before. My job was to create the supernatural audio style of the film as well as to add a living quality to each of the special visual effects.

Several group production meetings took place at Serafine FX studio with executive producer Freddie Fields, producers Mark Victor and Michael Grais and Gibson to analyze certain aspects of the film and to discuss style. We went through each frame of the film logging-in where specific sounds would be, plus deciding where off-stage sounds would be heard (After all you hear ghosts more than you see them.)

Interfacing with music composer Jerry Goldsmith was very important in determining the balance of sound effects with music that would be the most effective. Jerry had certain synthesizer sketches that he had done on a Yamaha DX7 and Passport MIDI 4 before his orchestral score dates. This gave us the time to hear what he had done, and to incorporate the sound effects in the correct key, rhythm and texture. Once we had received the initial production input, sound gathering was needed.

In collaboration with supervising sound editor Bob Rutledge and sound editor Scott Hecker, my assistant Rick Schwartz and I sorted through enormous amounts of stock library effects as well as sounds already compiled from other shows. Bob had created production sketch tracks with vocal effects artist Frank Welker. We were able to use these tracks as a guide, and after blending the tracks with our own, achieved a multi-personality with the varying spirits. These sounds were transferred from 35 mag and 1/4 inch to our PCM digital format by Bob's company, Blue Light Sound. Most of the



sounds were transferred in stereo, except for the sounds that were specific or pin-pointed and were required to be mono to allow us to image the sound anywhere in the theater.

The digital sound storage system used in our studio consists of the Sony PCM F-1 digital processor, the Sony SLO-420 professional Beta interlocked with a BTX 4600 edit controller. SMPTE time code is recorded on the analog track of the video, with the digital audio recorded on the video tracks. Once the sound effects are recorded, they are striped with time code, logged and stored into our computer for categorizing and organization. Our library contains over 25,000 freshly recorded digital sound effects that can be accessed in a matter of seconds. The recording equipment in our studio consists of a Tascam M-16 24-channel console, a Tascam MS-16 multi-track recorder and an ATR-60 analog 1/4 inch recorder with SMPTE center track. These are controlled and synchronized by a BTX Shadow system that enables SMPTE-based control of audio recorder functions, accuracy down to 100th of a



Rick Schwartz, left, using portable Sony PCMF-1 digital processor with Scott Hecker, right, recording baby pig squeals. Below: Serafine on location, records lion roars.

Photos by Ilona L. Karne

frame on punch-ins and punch-outs. Our signal processors include the Eventide SP-2016 and Harmonizer H-969, AudioDigital TC2, Audio & Design scramprack, Lexicon 224, Delta-Lab acoustic computer, DL 5 harmonizer and Y-expressor. Our synthesizers consist of Emulator's Emu II plus, Emu I and SP-12, Yamaha's DX7 and TX7, KORG's 8000, Casio's 5000, a MOOG synth (surprisingly one of our most useful units) and a Prophet 5, all of which are controlled through MIDI (Musical Instrument Digital Interface.)

MIDI is a computer port installed on all synthesizers: a standard



Serafine at work in studio.

created by the electronic music manufacturers to enable any or all of the various keyboards to communicate data. It is used as an intelligent interface between computer and synthesizer. The MIDI sequencer has made it possible to create an entirely different kind of recording studio. The computer-based sequencer "remembers" what you play and assigns this data to a track in the sequencer. You can lay down multiple tracks, and on playback can send this data to multiple slaved keyboards. This produces the same effect as multi-track recording the keyboards with a traditional recorder. Some of the more immediate advantages to the MIDI are its first generation sound quality and its zero fidelity loss in digital bouncing, since computer data is being transferred instead of sound. The evolution of MIDI has made the synthesizer an amazing tool for supplying sound effects for motion pictures.

The Apple IIe is our controlling computer, with all the synthesizers interfaced through the JL Cooper MSP 16/20 MIDI switchbox. We use the Emu II plus as our master keyboard; it produces sound by digitizing and storing external live signals, such as a line source or a microphone. The Emu II plus has a powerful MIDI sequencer with extensive editing capabilities, and has 34 seconds of memory. It allows

for the cueing of sounds with such ease of operation never before encountered. It has a built-in SMPTE reader/generator that conforms to the synchronization standard of the professional film, video and recording industries. The implications for the creative expansion for sound effects are enormous when coupled with SMPTE synchronization. All of the sounds we have compiled in our digital library are sampled into our Emu II plus. This allows us the freedom of easy access and the ability to manipulate and perform sound effects directly in sync with the picture. Once a sound is sampled into the Emu II plus it can be time-compressed, stretched, bent, turned backwards, pitch shifted, given a doppler effect, filtered, edited and looped.

Many of the specific sounds sampled into the Emu II plus for *Polytergeist II* were recorded fresh in the field using a portable Sony PCM F-1 digital tape recorder, with PZM, RE-20 microphones and ACO test mics. Such locations as pig farms and wildlife preserves were needed to capture the types of sounds we were looking to use. Animal growls, attacks and mating sounds (the stranger the better) were required to fulfill the demands of an ever changing and transforming "beast". We also sampled many other pre-recorded sounds to blend and enhance our sound.

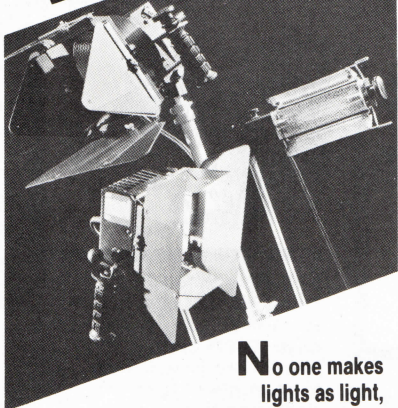
For the opening scene, much experimentation was done with different types of winds, synthesizer whisps and Indian bullwhips for characterizing the Indian spirits that envelope Taylor (Will Sampson). These elements support the special visuals literally, but the nature of the scene needed the addition of a soulful quality. I researched different Indian chants (Hopi and Navajo) to help support the reality of the supernatural Indian spirits. These spirits were "good" spirits, and needed a friendly almost inviting sound blended with the other elements. The same Indian spirit composite was used throughout the picture in varying degrees as a supportive element and to add a continuity to the audio style of the film.

The "worm beast", however, was probably the greatest individual sound challenge of the film. The evolution of this beast needed continuity from its birth through to its death. In the birthing stage, the beast was comprised aurally of the noise from a dentist's suction tube, which gave a rather organic torturing sound needed for the initial shock of its first appearance out of Stephen's (Craig Nelson) mouth. As the beast progressed, some of Frank Welker's ADR tracks were introduced as it was spinning through the air and squirming on the floor. We decided at this point to leave a brief period of silence as it was under the bed to add a touch of suspense.

As the bed was thrown and the beast reappeared, we gave the scene an unusual sexual nature by using strange breathing, jello effects and camel slobber. Later, as the beast grew into the hallway, tracks were created by Brian and me recording ourselves cursing and sampling our dialogue directly into the Emu II plus. This sequence required over 30 floppy discs, and over 150 sound effect units to create the final dub.

Moog synthesizer wind blended with vocal elements were used as the bathroom doors closed to set up the "braces" scene. Bob Rutledge had recorded several foley tracks of wires being pulled through teeth which were then sampled on the Emu II plus and played in clusters (similar to playing eight different tracks in real time). We digitally recorded different gauges of wires and cable as they were spun

THE "LIGHT" LIGHTS



No one makes lights as light, and with the durability demanded for professional results, as Lowel. And no lighting system has more mounting devices and beam control accessories than Lowel. So for portable, professional lighting equipment that is truly portable and truly professional, it's the light lights — Lowel Lights. Birns & Sawyer stocks one of the largest Lowel inventories in the country.



BIRNS & SAWYER, INC.

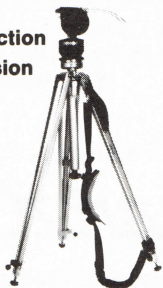
1026 N. Highland Ave., Hollywood, CA 90038
(213) 466-8211 Cable BIRNSAW TELEX 673280



Get a leg up
on the
competition
with the
FAST TRIPOD

SUPERSTIX

- Aluminum construction
- Swiss-made precision
- Weatherproof
- Lightweight
- Ball level
- Rising column
- Carry handle
- Shoulder strap
- Velcro tie-ups



SuperStix (Legs only) **\$699.**
SuperStix w/Miller Pro 106 .. **\$1625.**
SuperStix w/O'Connor 30 ... **\$1995.**
SuperStix w/O'Connor 50 ... **\$2895.**
SuperStix w/Sachtler 7+7 .. **\$2995.**

**IMAGE DEVICES
INTERNATIONAL**

MIAMI

ATLANTA

1825 NE 149 Street 3311 Empire Blvd.
P. O. Box 61-0606 P. O. Box 82835
Miami FL 33181 Atlanta GA 30354
PHONE 305 / 945-1111 PHONE 404 / 766-1111

IDI ships anywhere in the world

through the air at high speeds, and added these to existing elements. This gave us the dense metallic sound needed to audibly illustrate the thousands of strands of wires wrapping around Robbie (Oliver Robbins). But to provoke fear in the audience, a dentist's drill was blended to these tracks to subliminally touch the subconscious.

This led directly into a scene we call the "chair spirit" scene. As Stephen sits down to relax from the braces attack, he is blasted from the chair by Kane's spirit. Since there were no special visual effects, the scene had to be carried completely by sound. Tracks were blended from sounds I had recorded at Lockheed Aerospace Center—wind tunnels—air that blasted at 100 tons of air per second. This combined with a hydraulic air compression release and more Moog elements created the appropriate force for the blast from the chair. A doppler gong was used for the spirit's subsequent rise, but not before it was processed through a delay reverb and an "endless room" program on the Eventide SP-2016. This last process created a transparent sound which was pitch-shifted up as the spirit rose and moved.

In an earlier scene, Carol Ann (Heather O'Rourke) was cornered by toys that come alive and was laser-zapped by a talking robot. For the robot we auditioned many different voices (Julian Beck's, Frank Welker's, etc.) We decided, however, to go with a speech synthesizer, DecTalk made by Digital Equipment Corp. Unlike other text-to-speech products, DecTalk allows the user the ability to custom design an original voice, with control over large vocal parameters. This range includes many different personalities which can talk at the same time and even sing songs! We were able to program the DecTalk to speak in the same key as Jerry Goldsmith's score, to retain continuity. The laser zap was again a Moog effect, and to create impact as the spirits entered the room we used low end thuds. Sparkling elements performed on the Yamaha DX7 were added to raise the intensity of the scene as well as give it a hypnotic feeling.

The "astral world" scene at the film's end was considered to be, in effect, its own movie. Many of the

special visual effects had not arrived until very late in the post-production stage. Those last days became long pressured hours trying to finish before the deadline. Team work on behalf of everyone involved was needed to get the last two reels done in two weeks. Over 100 units of sound FX were manufactured at Serafine FX as well as more units of foley, ADR and effects from Blue Light Sound. With these gathered together we were ready for the final dub.

The sound dubbing was done at the Cary Grant theater at MGM using a Westec quad eight console, with Mike Kohut, dialog mixer; Carlos Delarios, effects mixer; and Aaron Roshin, music mixer. Much of the dialog, as when Diane (JoBeth Williams) and Carol Ann are sucked into the astral world, was processed on the stage with the Eventide SP-2016 and H-969. The astral wind and freed spirit effects were processed on these units and programmed by Rick Schwartz. The effects were so heavily processed that I simply guided the sound with my voice and the processors took it from there, acting almost like a synthesizer.

To set the ambience of the cave, Carlos processed whale sounds in a long deep reverb which proved to be quite eerie. Mike Kohut processed the voice of the Diane & Carol Ann in the interior of the cave with the Lexicon 224 XL. Once the basic sound was created, we spun the sound around the theater speakers with a joystick to give the sensation of voices traveling in another dimension, psycho-acoustically. These processors together with the Emu II plus were often used on the stage for last minute touch ups, which saved the time of creating the effects in my studio, transferring and editing to mag during the pressured time schedule. In the end it worked beautifully.

With the advancements available to us in film sound, *Poltergeist II* offered us the ultimate opportunity: to enhance the ever-increasing visual demands of such motion pictures today, to expand creativity and to innovate the tools of sound technology. △

Serafine FX is in Santa Monica. Star Trek I was the author's first-credit and he has added many others since then.